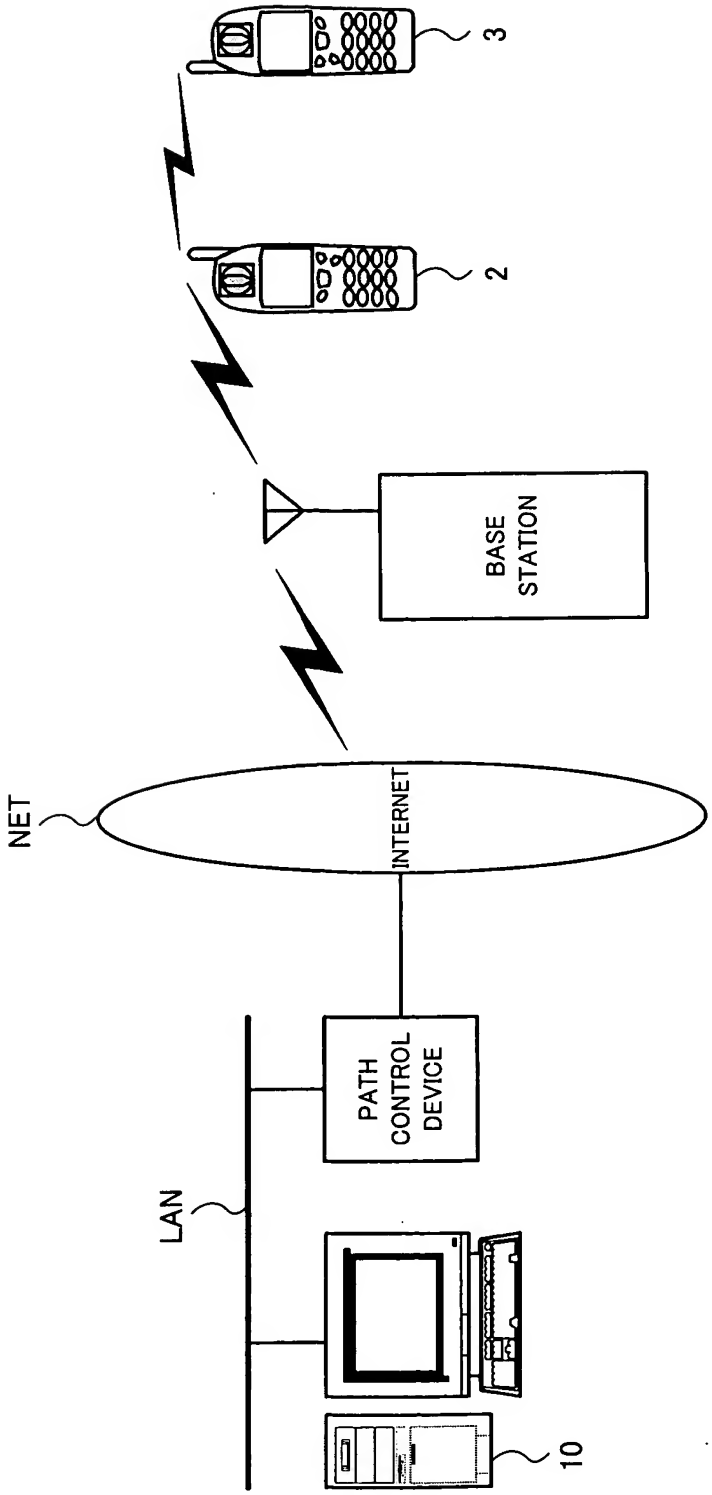

FIG. 1

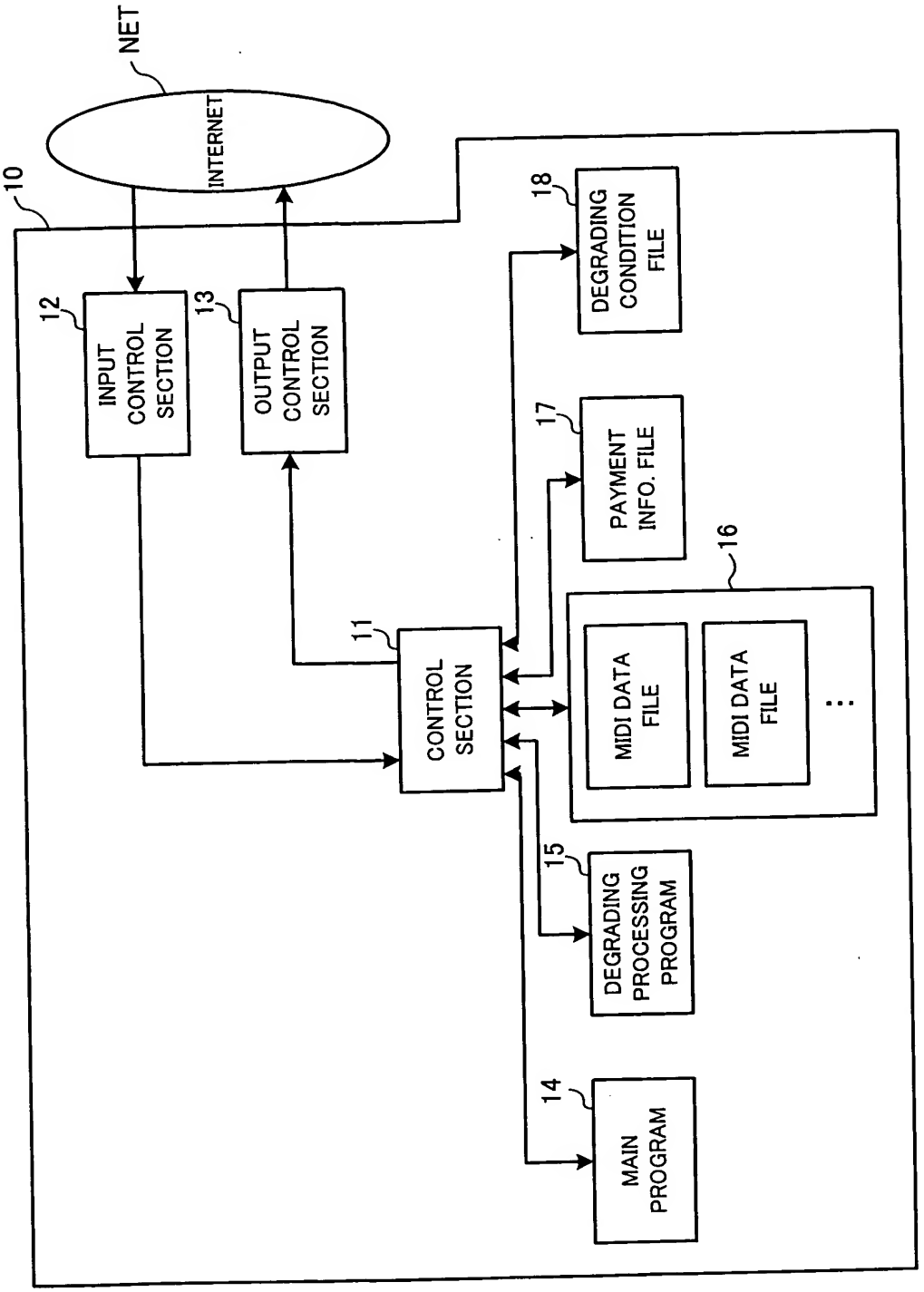
NET
INTERNET
10
12
INPUT CONTROL SECTION
13
OUTPUT CONTROL SECTION
18
DEGRADING CONDITION FILE
17
PAYMENT INFO. FILE
16
11
CONTROL SECTION
MIDI DATA FILE
MIDI DATA FILE
15
DEGRADING PROCESSING PROGRAM
14
MAIN PROGRAM

FIG. 2

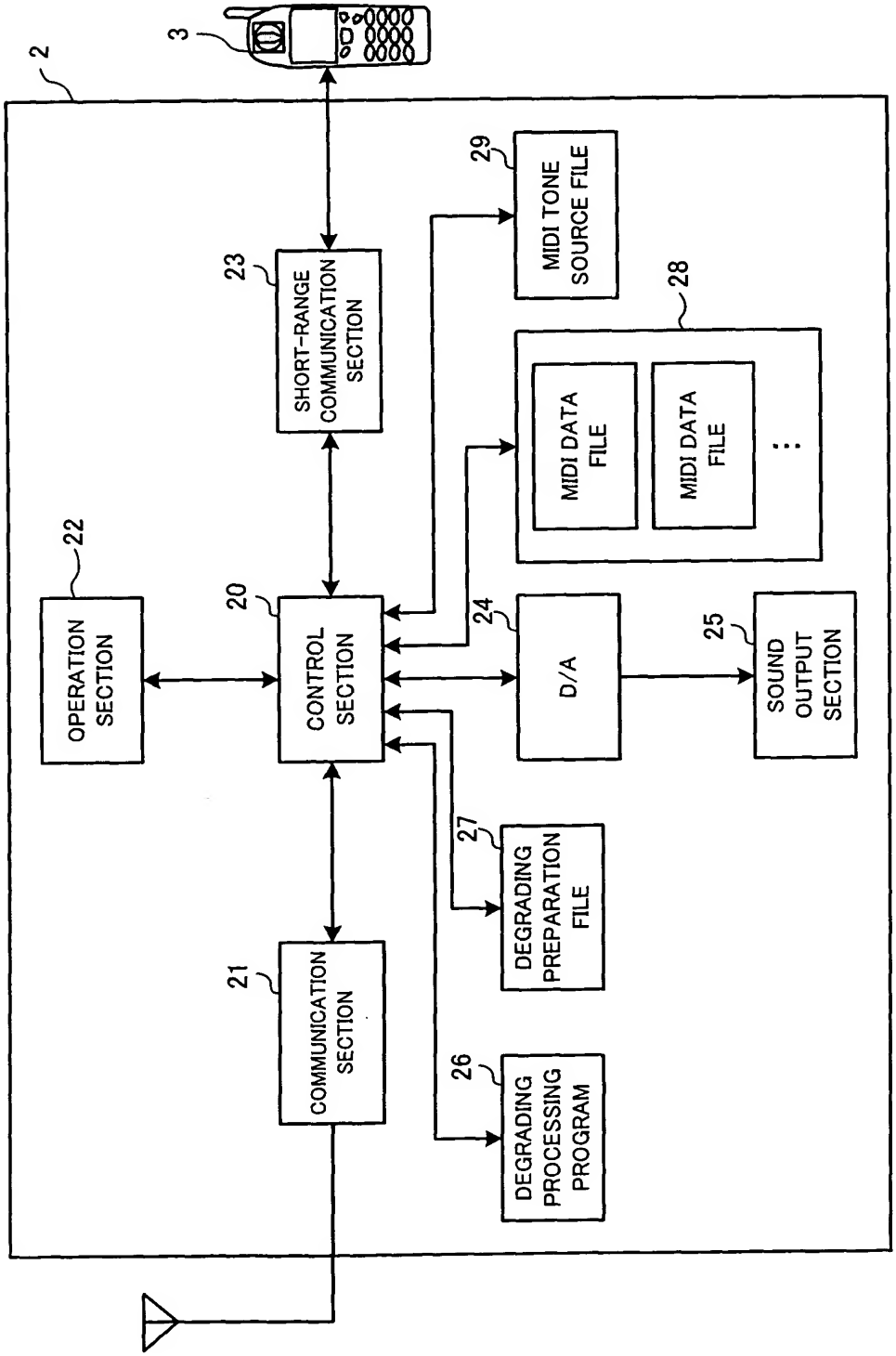
2
3
23
SHORT-RANGE COMMUNICATION SECTION
29
MIDI TONE SOURCE FILE
28
MIDI DATA FILE
MIDI DATA FILE
22
OPERATION SECTION
20
CONTROL SECTION
24
D/A
25
SOUND OUTPUT SECTION
27
DEGRADING PREPARATION FILE
21
COMMUNICATION SECTION
26
DEGRADING PROCESSING PROGRAM

FIG. 3

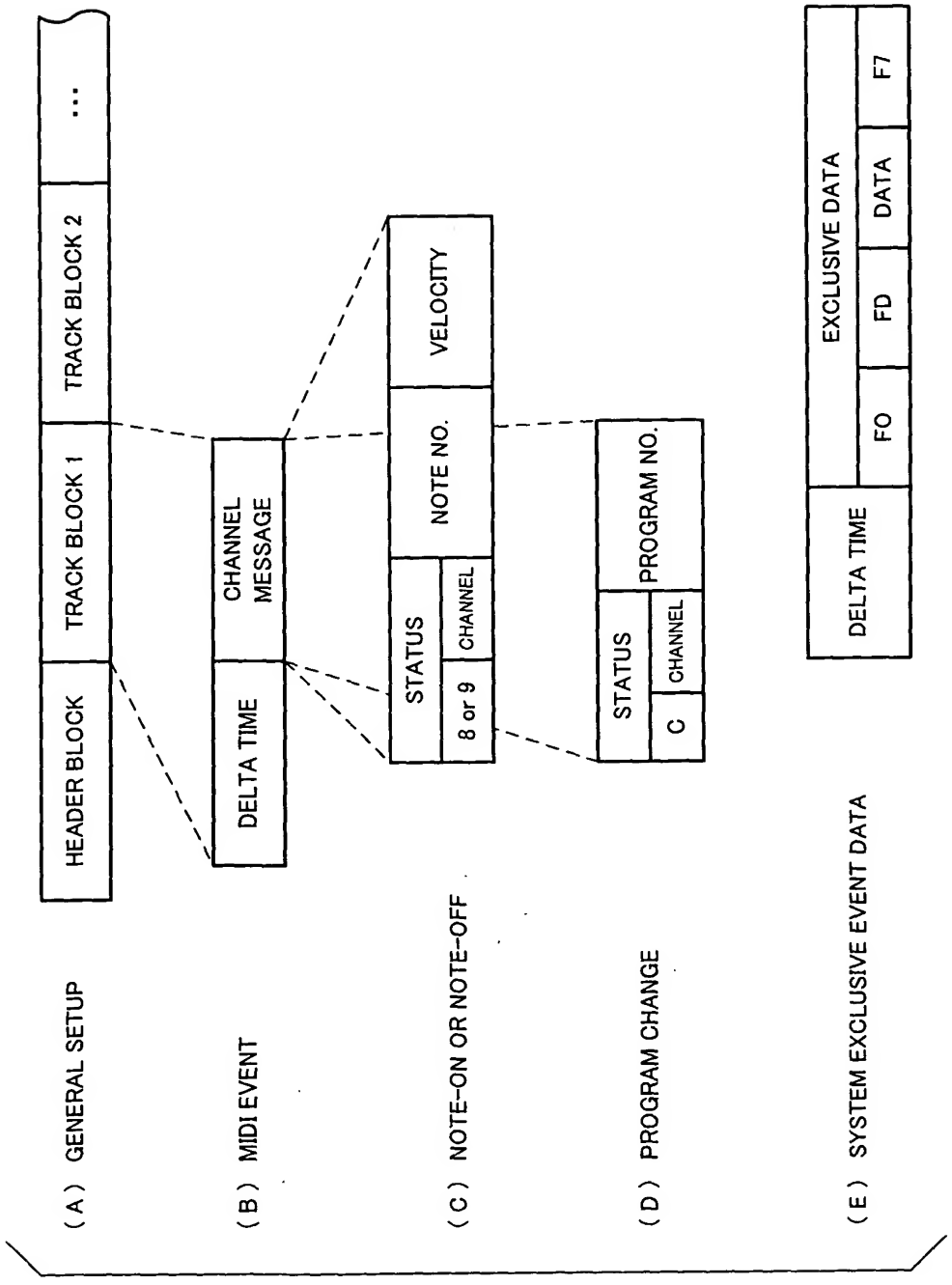
(A) GENERAL SETUP
HEADER BLOCK
TRACK BLOCK 1
TRACK BLOCK 2
...
(B) MIDI EVENT
DELTA TIME
CHANNEL MESSAGE
(C) NOTE-ON OR NOTE-OFF
STATUS
8 or 9
CHANNEL
NOTE NO.
VELOCITY
(D) PROGRAM CHANGE
STATUS
C
CHANNEL
PROGRAM NO.
(E) SYSTEM EXCLUSIVE EVENT DATA
DELTA TIME
EXCLUSIVE DATA
FO
FD
DATA
F7

FIG. 4

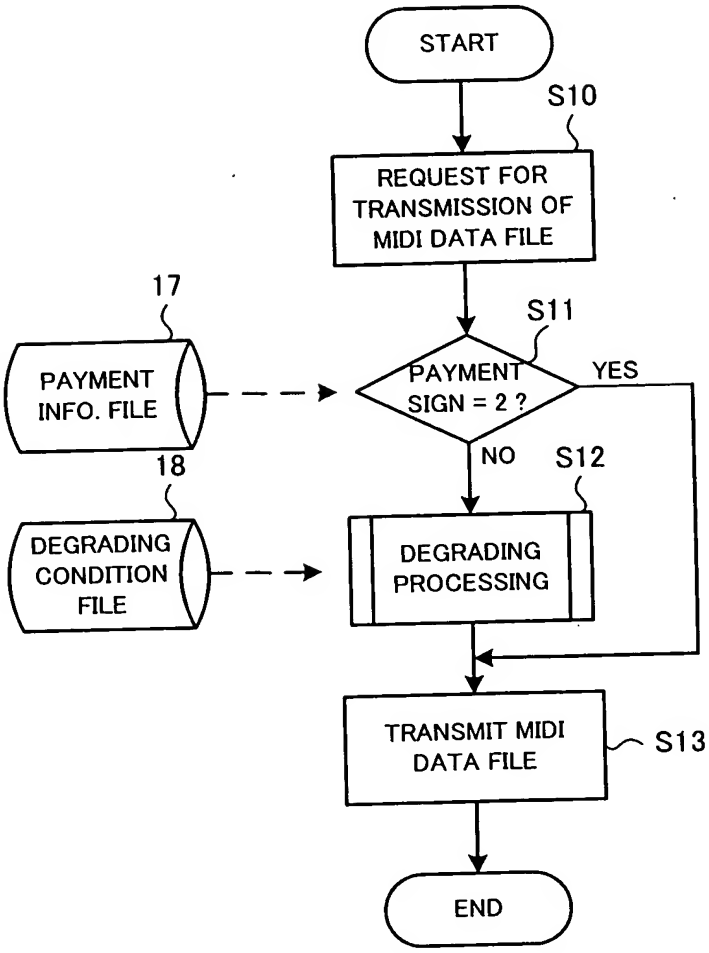
START
S10
REQUEST FOR TRANSMISSION OF MIDI DATA FILE
17
PAYMENT INFO. FILE
S11
PAYMENT SIGN = 2 ?
YES
NO
S12
18
DEGRADING CONDITION FILE
DEGRADING PROCESSING
TRANSMIT MIDI DATA FILE
S13
END

FIG. 5

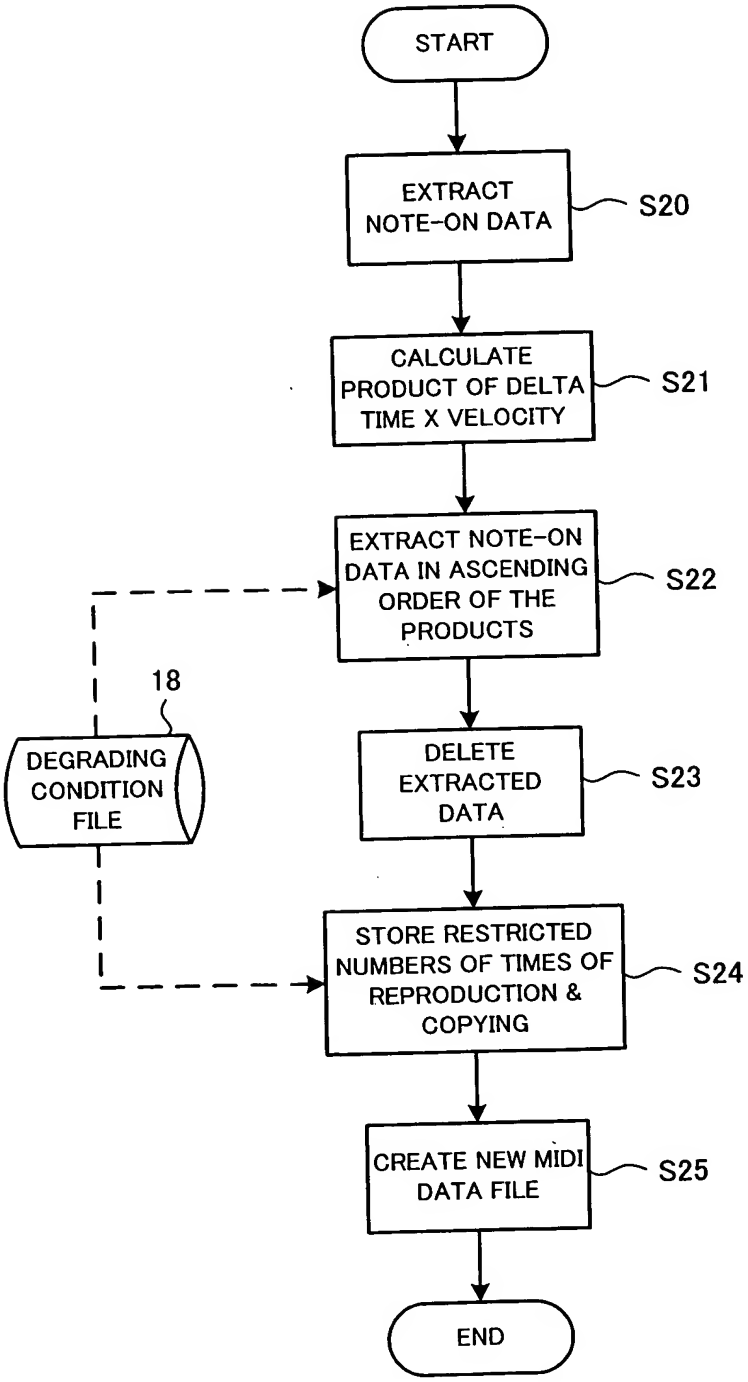
START
EXTRACT NOTE-ON DATA
S20
CALCULATE PRODUCT OF DELTA TIME X VELOCITY
S21
EXTRACT NOTE-ON DATA IN ASCENDING ORDER OF THE PRODUCTS
S22
18
DEGRADING CONDITION FILE
DELETE EXTRACTED DATA
S23
STORE RESTRICTED NUMBERS OF TIMES OF REPRODUCTION & COPYING
S24
CREATE NEW MIDI DATA FILE
S25
END

FIG. 6

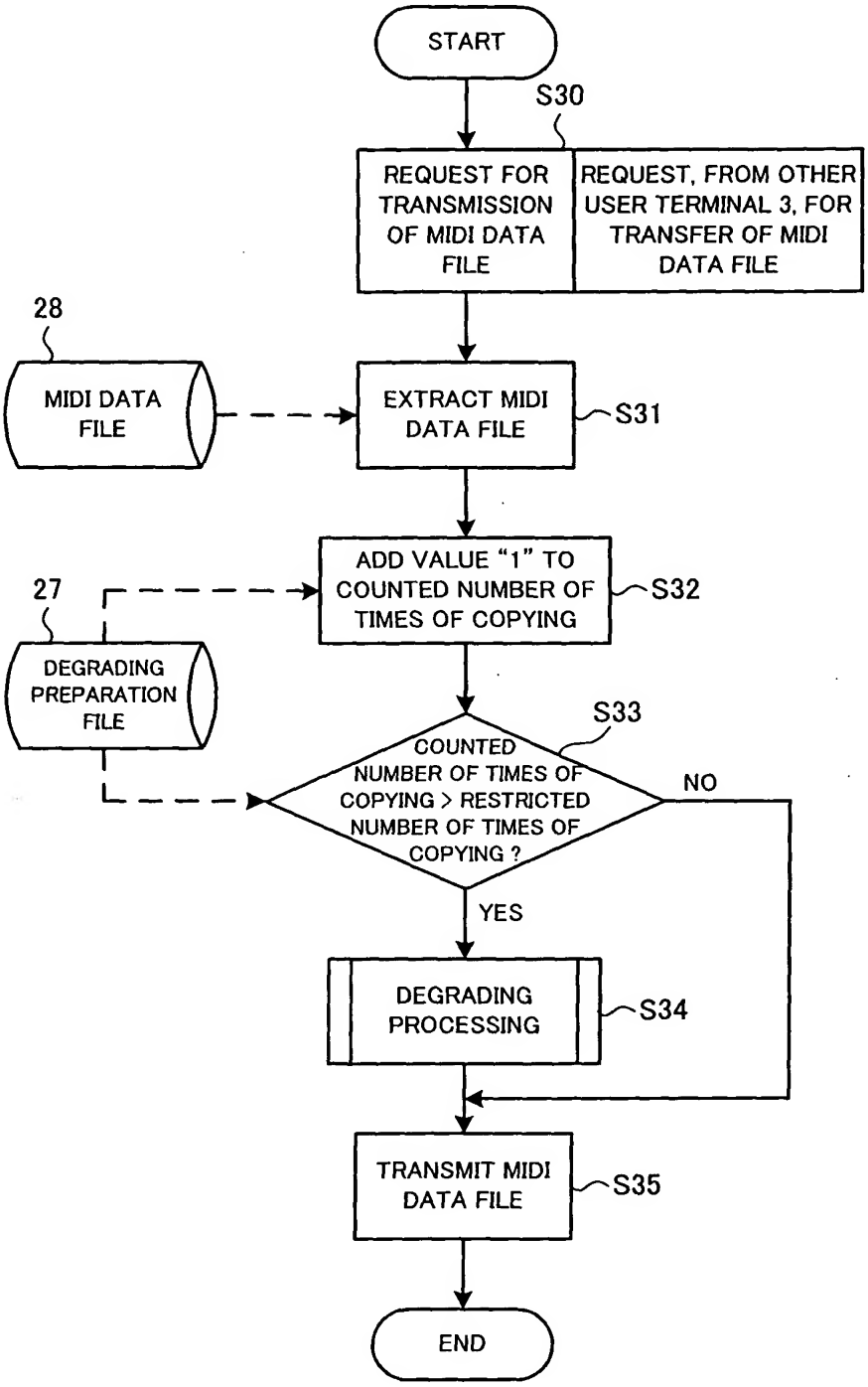
START
S30
REQUEST FOR TRANSMISSION OF MIDI DATA FILE
REQUEST, FROM OTHER USER TERMINAL 3, FOR TRANSFER OF MIDI DATA FILE
28
MIDI DATA FILE
EXTRACT MIDI DATA FILE
S31
ADD VALUE "1" TO COUNTED NUMBER OF TIMES OF COPYING
S32
27
DEGRADING PREPARATION FILE
S33
COUNTED NUMBER OF TIMES OF COPYING > RESTRICTED NUMBER OF TIMES OF COPYING ?
NO
YES
DEGRADING PROCESSING
S34
TRANSMIT MIDI DATA FILE
S35
END

FIG. 7

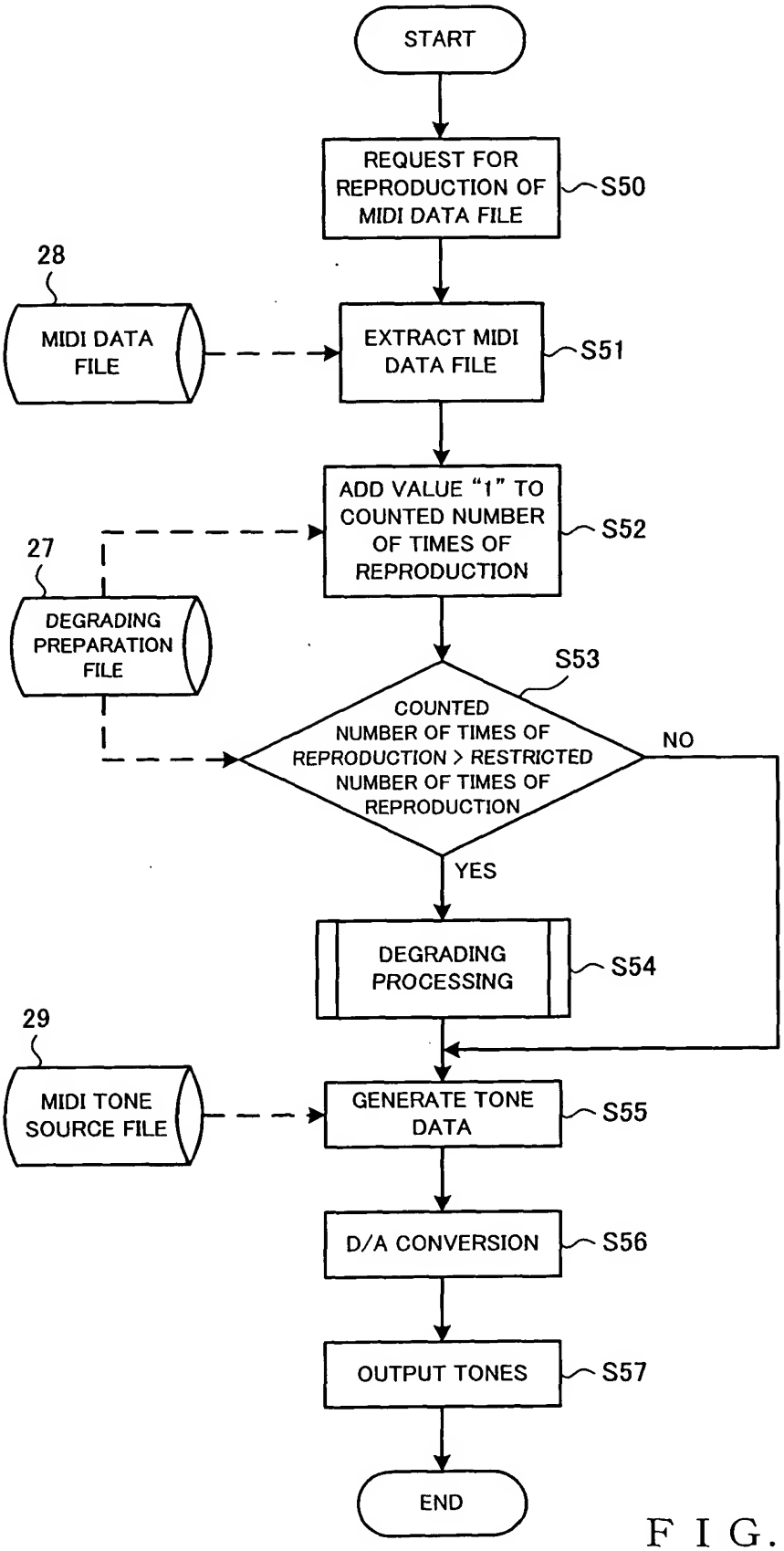
START
REQUEST FOR REPRODUCTION OF MIDI DATA FILE
S50
28
MIDI DATA FILE
EXTRACT MIDI DATA FILE
S51
ADD VALUE "1" TO COUNTED NUMBER OF TIMES OF REPRODUCTION
S52
27
DEGRADING PREPARATION FILE
S53
COUNTED NUMBER OF TIMES OF REPRODUCTION > RESTRICTED NUMBER OF TIMES OF REPRODUCTION
NO
YES
DEGRADING PROCESSING
S54
29
MIDI TONE SOURCE FILE
GENERATE TONE DATA
S55
D/A CONVERSION
S56
OUTPUT TONES
S57
END

FIG. 8

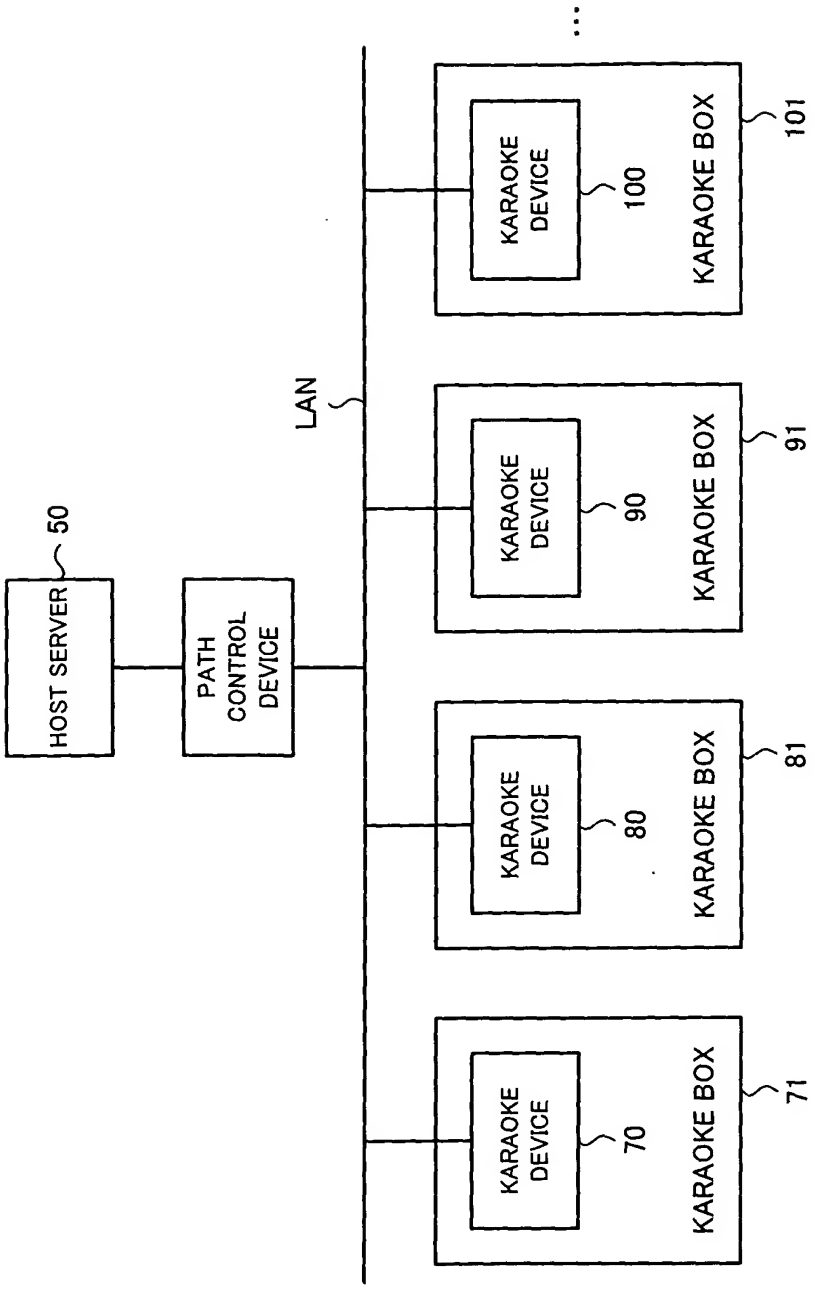
HOST SERVER
50
PATH CONTROL DEVICE
LAN
KARAOKE DEVICE
100
KARAOKE BOX
101
KARAOKE DEVICE
90
KARAOKE BOX
91
KARAOKE DEVICE
80
KARAOKE BOX
81
KARAOKE DEVICE
70
KARAOKE BOX
71

FIG. 9

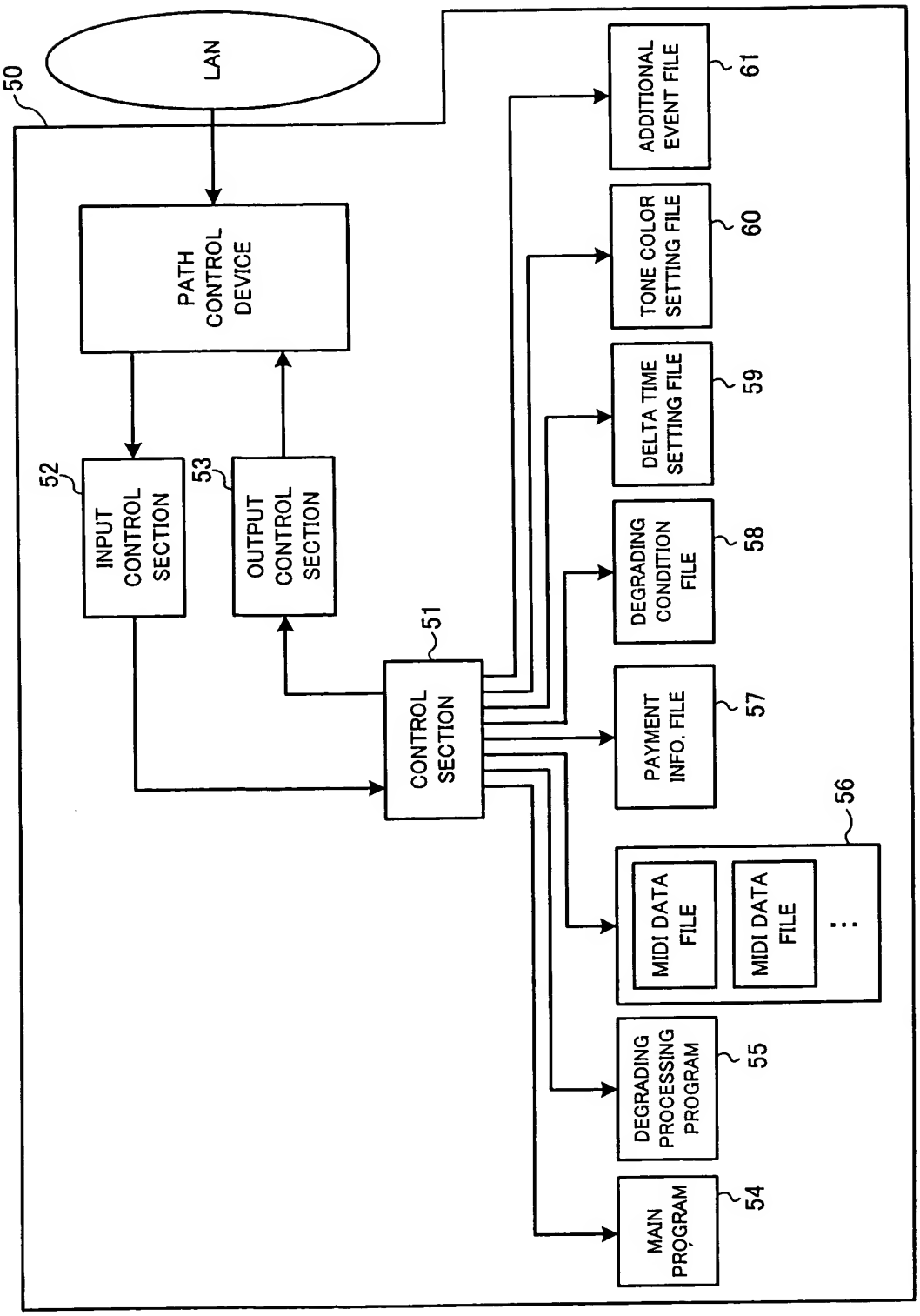
50
LAN
PATH CONTROL DEVICE
52
INPUT CONTROL SECTION
53
OUTPUT CONTROL SECTION
51
CONTROL SECTION
ADDITIONAL EVENT FILE
61
TONE COLOR SETTING FILE
60
DELTA TIME SETTING FILE
59
DEGRADING CONDITION FILE
58
PAYMENT INFO. FILE
57
56
MIDI DATA FILE
MIDI DATA FILE
...
DEGRADING PROCESSING PROGRAM
55
MAIN PROGRAM
54

FIG. 10

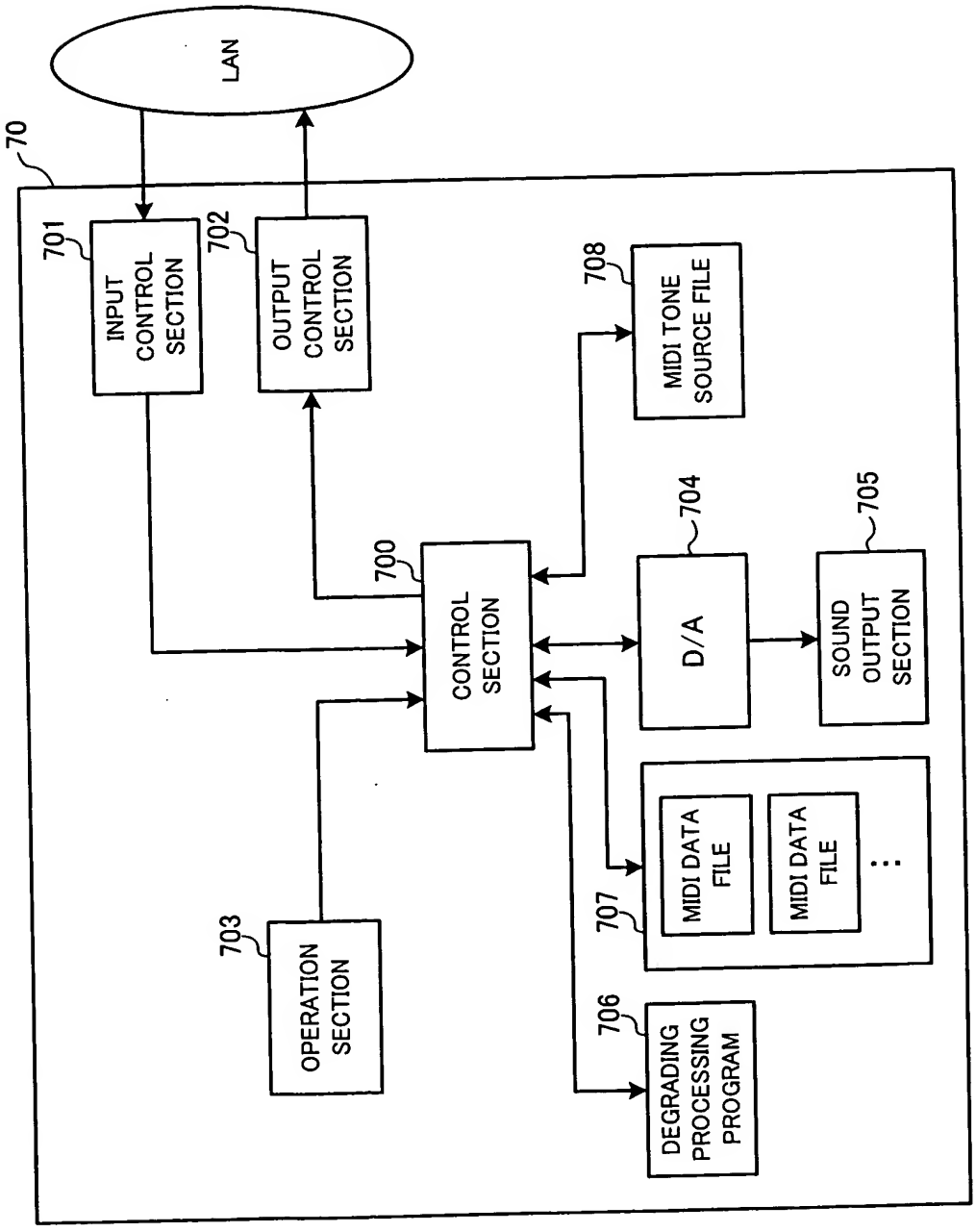
LAN
70
701
INPUT CONTROL SECTION
702
OUTPUT CONTROL SECTION
708
MIDI TONE SOURCE FILE
704
705
700
CONTROL SECTION
D/A
SOUND OUTPUT SECTION
MIDI DATA FILE
MIDI DATA FILE
707
703
OPERATION SECTION
706
DEGRADING PROCESSING PROGRAM

FIG. 11

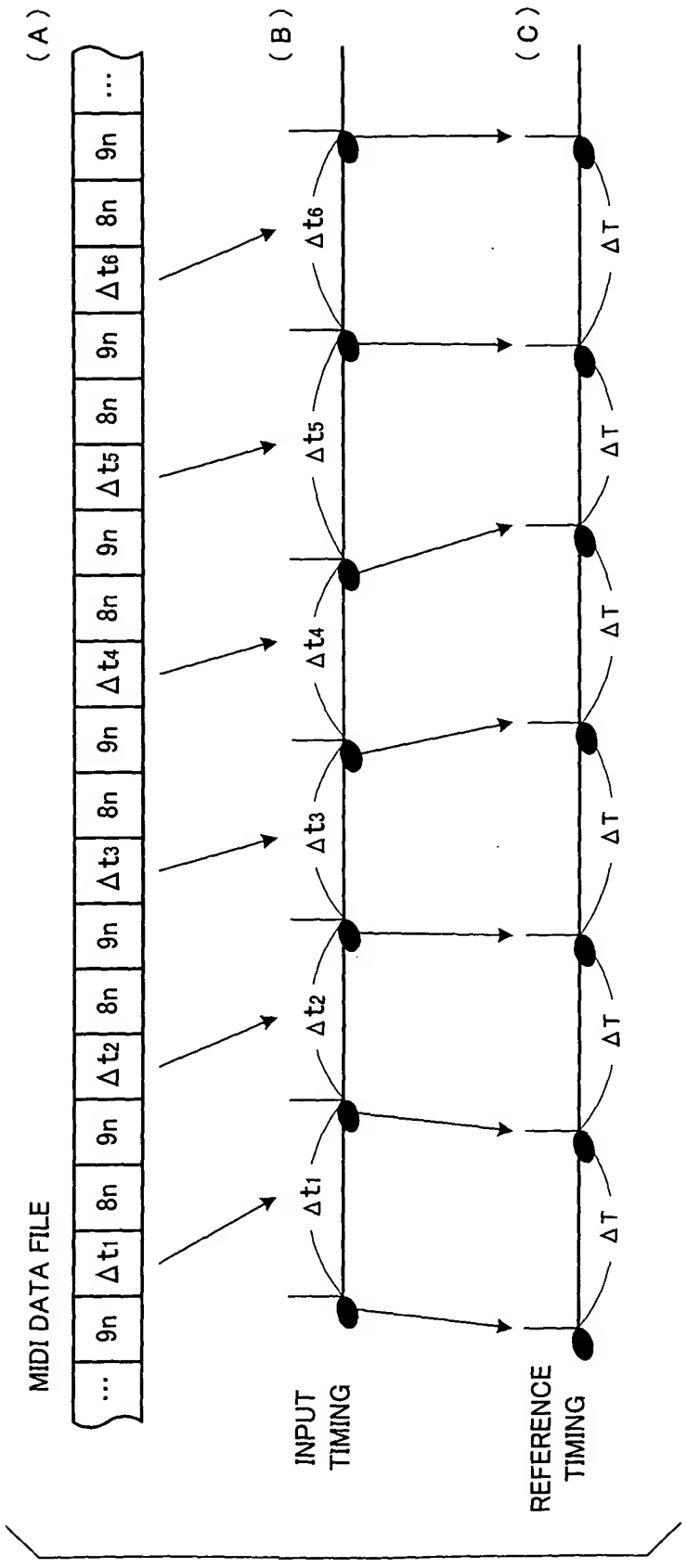
(A)
(B)
(C)
MIDI DATA FILE
INPUT TIMING
REFERENCE TIMING
9n
8n
Δt1
Δt2
Δt3
Δt4
Δt5
Δt6
ΔT

FIG. 12

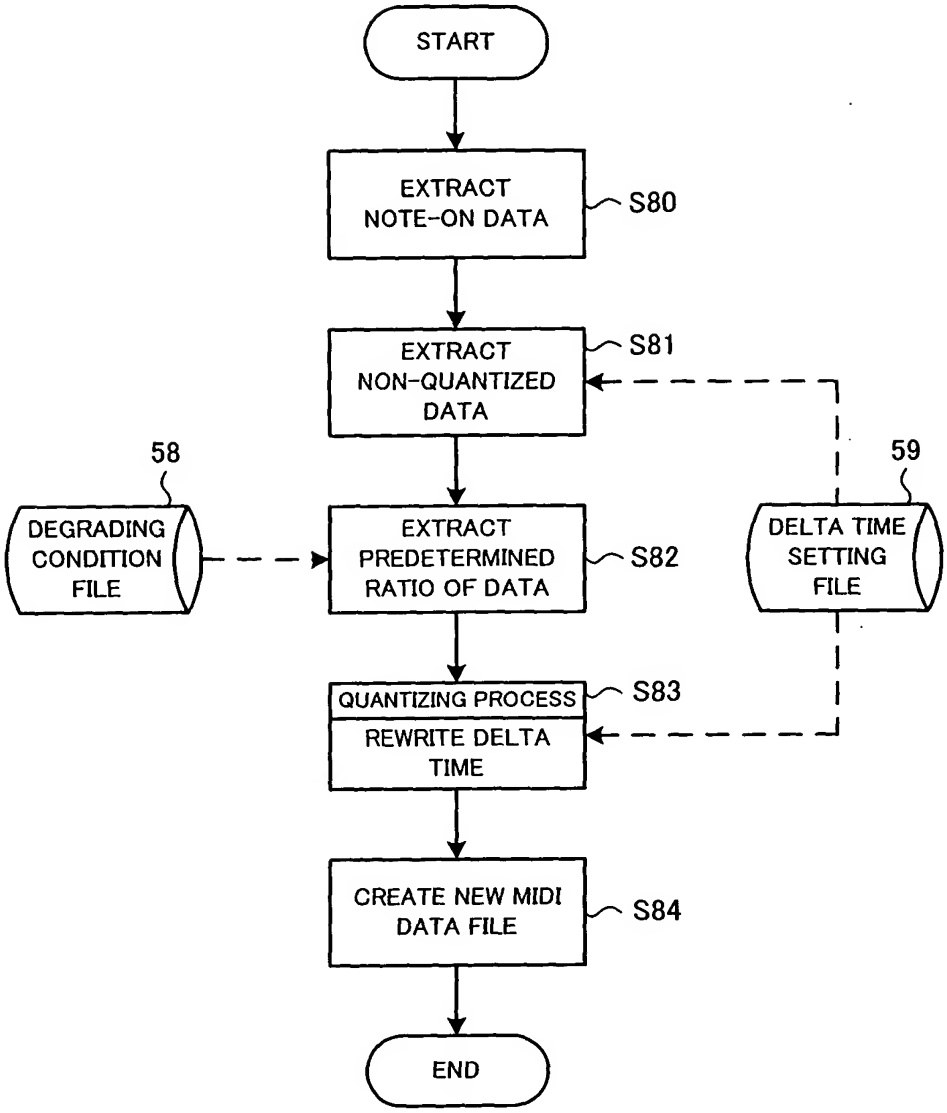
START
EXTRACT NOTE-ON DATA
S80
EXTRACT NON-QUANTIZED DATA
S81
58
59
DEGRADING CONDITION FILE
EXTRACT PREDETERMINED RATIO OF DATA
S82
DELTA TIME SETTING FILE
QUANTIZING PROCESS
S83
REWRITE DELTA TIME
CREATE NEW MIDI DATA FILE
S84
END

FIG. 13

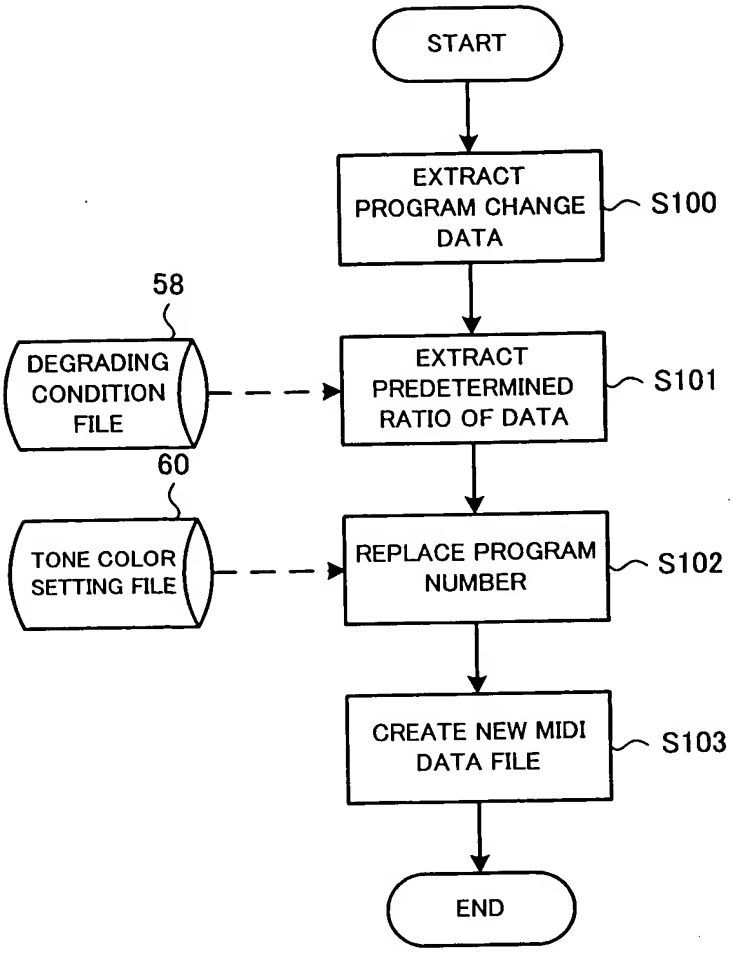
START
EXTRACT PROGRAM CHANGE DATA
S100
58
DEGRADING CONDITION FILE
EXTRACT PREDETERMINED RATIO OF DATA
S101
60
TONE COLOR SETTING FILE
REPLACE PROGRAM NUMBER
S102
CREATE NEW MIDI DATA FILE
S103
END

FIG. 14

SERVER : CHARGE PAYMENT FILE

USER ID	MIDI DATA FILE NO.	PAYMENT SIGN
⋮	⋮	⋮
AAAAA	11111	2
AAAAA	12221	1
AAAAA	21211	0
BBBBB	11111	1
BBBBB	12221	2
BBBBB	21211	1
CCCCC	11111	0
CCCCC	12221	0
CCCCC	21211	0
⋮	⋮	⋮

FIG. 15

DEGRADING CONDITION FILE

PAYMENT SING	RESTRICTED NUMBER OF TIMES OF COPYING	RESTRICTED NUMBER OF TIMES OF REPRODUCTION	DEGREE OF DEGRANING
			NUMBER OF WEAK-IMPRESSION DATA TO BE CHANGED
0	0	0	45
1	5	50	30
2	10	100	0

FIG. 16

USER TERMINAL : DEGRADING PREPARATION FILE

MIDI DATA FILE NO.	COUNTED NUMBER OF TIMES OF REPRODUCTION	COUNTED NUMBER OF TIMES OF COPYING
⋮	⋮	⋮
11111	10	1
12221	20	2
21211	5	6
⋮	⋮	⋮

FIG. 17

USER TERMINAL : RESTRICTED-NUMBER-OF-TIME FILE

CONDITION OF NUMBER OF TIMES OF COPYING		0 ≦ COUNTED NUMBER OF TIMES OF COPYING ≦ RESTRICTED NUMBER OF TIMES OF COPYING	RESTRICTED NUMBER OF TIMES OF COPYING < COUNTED NUMBER OF TIMES COPYING ≦ RESTRICTED NUMBER OF TIMES OF COPYING + 5	RESTRICTED NUMBER OF TIMES OF COPYING + 5 < COUNTED NUMBER OF TIMES OF COPYING
CONDITION OF NUMBER OF TIMES OF REPRODUCTION		0 ≦ COUNTED NUMBER OF TIMES OF REPRODUCTION ≦ RESTRICTED NUMBER OF TIMES OF REPRODUCTION	RESTRICTED NUMBER OF TIMES OF REPRODUCTION < COUNTED NUMBER OF TIMES OF REPRODUCTION ≦ RESTRICTED NUMBER OF TIMES OF REPRODUCTION + 25	RESTRICTED NUMBER OF TIMES OF REPRODUCTION + 25 < COUNTED NUMBER OF TIMES OF REPRODUCTION
DEGREE OF DEGRADING	NUMBER OF WEAK-IMPRESSION DATA TO BE CHANGED	0	30	45

FIG. 18

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DEGRADING CONDITION FILE

PAYMENT SING	DEGREE OF DEGRADING		
	QUANTIZING RATIO	TONE COLOR CHANGING RATIO	RATIO OF WEAK-IMPRESSION DATA TO BE CHANGED
0	20	20	45
1	10	10	30
2	0	0	0

FIG. 19

DELTA TIME SETTING FILE

REFERENCE DELTA TIME VALUE	NOTE
1920	WHOLE NOTE
1440	DOTTED HALF NOTE
960	HALF NOTE
720	DOTTED QUARTER NOTE
480	QUARTER NOTE
360	DOTTED EIGHTH NOTE
240	EIGHTH NOTE
180	DOTTED SIXTEENTH NOTE
120	SIXTEEN NOTE
90	DOTTED THIRTY-SECOND NOTE
60	THIRTY SECOND NOTE

FIG. 20

TONE COLOR SETTING FILE

TONE COLOR GROUP	PROGRAM NO.	REPLACING PROGRAM NO.
⋮	⋮	⋮
TRUMPET	11	12
	12	13
	13	14
	14	15
	15	11
	⋮	⋮
PIANO	100	101
	101	102
	⋮	⋮

FIG. 21